Transfers of Some Nearctic Genera and Species of Glyphipterigidae *(auctorum)* to Oecophoridae, Copromorphidae, Plutellidae, and Tortricidae[1]

(Lepidoptera)

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During revisionary studies of North American Glyphipterigidae *(auctorum)* — Glyphipterigidae (Copromorphoidea) and Choreutidae (Sesioidea) — several genera and species assigned to this group, most recently by McDunnough (1939), were found to belong to other families. The mostly western North American species are herein transferred to appropriate families so the names can be properly assigned in the forthcoming checklist fascicle of the series, *The Moths of America North of Mexico.* Other genera associated with Glyphipterigidae *(auctorum)* will be further assigned to appropriate families in a world catalog of these names currently in preparation (Heppner, in prep.).

In addition to the taxa noted below, *Thelethia extranea* (Edwards), also included in the glyphipterigids by Meyrick (1913) and McDunnough (1939), has already been placed in *Tegeticula* (Incurvariidae: Prodoxinae) by Davis (1967).

Type specimens were examined at the following institutions and the curators at each are gratefully thanked for their help: Academy of Natural Sciences, Philadelphia (ANSP); British Museum (Natural History), London (BMNH); Canadian National Collection, Agriculture Canada, Ottawa (CNC); Humboldt Universität, Zoologisches Museum, Berlin (HZMB); Museum of Comparative Zoology, Harvard University, Cambridge (MCZ); National Museum of Natural History, Smithsonian Institution, Washington (USNM); and Naturhistorisches Museum, Vienna (NHMV).

Other species in some of the transferred genera may upon further investigation remain in these genera and also be transferred. Species having lectotypes instead of holotypes have this noted below each name: lectotypes have been chosen and will be designated in revisions currently in preparation except for the oecophorid species for which the lectotype is designated here so this will be made available for other workers at this time.

In the synonymies below the sequence includes the citations for the original description, the type-species of the genus, designator of the type-species (if not by monotypy), and the included species from North America. Under the specific names there is the original citation, type data and location of the type, followed by the original

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generic combination if different from the current generic placement. Type locality information in brackets is augmented data, mostly county names not usually noted in the original locality data.

Oecophoridae

"Glyphipteryx" [sic] *quinqueferella* Walsingham, 1881, Proc. Zool. Soc. Lond. 1881:322.
Lectotype ♂ (BMNH). California: [Hatchet Creek], Shasta County.

This species was originally described by Walsingham in the genus *Glyphipterix* (Glyphipterigidae), undoubtedly due to the superficial resemblance of the adult to several species of this genus in California. The genitalia and other adult morphological characters, notably the long labial palpi and scaled haustellum (glyphipterigids have a naked haustellum), indicate that this species is an oecophorid. The species appears to be related to members of the oecophorid genus *Fabiola* in the tribe *Oecophorini* (Hodges, pers. comm.).

The female is unknown and no biological information is available. Males have been collected in montane areas of California in the Sierra Nevada and near Mt. Shasta. The lectotype ♂ is hereby selected from among 4 syntypes in the British Museum (Natural History) with the following label data: LECTOTYPE [round, purple edge]/[reversed] Type H.T. [round, red edge]/Hatchet Creek, Shasta Co., CALIFORNIA, 14-17. VII. 1971, Wlsm. 92020/Walsingham, Collection, 1910-427/[Durrant label] TYPE ♂ descr., fig. d./LECTOTYPE ♂, *Glyphipteryx quinqueferella* Wlsm., By Heppner '76/.BM. ♂, Genitalia Slide, No. 20231. There are three other syntypes extant, all labelled paralectotypes, with the same locality data as above: USNM (2♂) and MCZ (1♂). The three paralectotypes at the British Museum are also from the Walsingham collection: 3♂, Wlsm. 92021 to 92023.

Copromorphidae

Lotisma Busck, 1909, Proc. Entomol. Soc. Wash. 11:98.
Type-species: *Sciaphila trigonana* Walsingham, 1879, orig. desig.

trigonana (Walsingham, 1879), N. Amer. Tort. *in* Butler, Illus. Heterocera Br. Mus. 4:22. *(Sciaphila).*
Lectotype ♀ (BMNH). California: Mendocino, [Mendocino County].
kincaidiella Busck, 1904, Proc. U.S. Nat. Mus. 27:747. *(Hemerophila).*
Lectotype ♂ (USNM). Washington: Seattle, [King County].
vulcanicola Meyrick, 1932, Exot. Microlepid. 4:285.
Holotype ♂ (NHMV). Costa Rica: Irazu.

Lotisma was proposed for a single species, *L. trigonana,* which was originally described as a tortricid. *Lotisma* was placed in Glyphipterigidae *(auctorum)* by Barnes and McDunnough (1917), but Meyrick (1927) considered it (together with *Ellabella,* below) to be near the ethmiids. In his treatment of New World Ethmiidae, Powell (1973) noted that both *Lotisma* and *Ellabella* are neither ethmiid nor gelechioid.

Morphological features of adult *Lotisma* species and characters of the larva of *L. trigonana* demonstrate affinities to other members of the Copromorphoidea. The lack of reduced wing venation and larval characters do not indicate a position in the Carposinidae, as indicated by MacKay (1972), but show relationships to other species of Copromorphidae. The Copromorphidae are here extended into North America from the Neotropics for the first time by the inclusion of *Lotisma* in this family.

Only two species of *Lotisma* are known thus far. The genus will be discussed further in a review currently in preparation. *Lotisma trigonana* has been reared from *Arbutus menziesii* Pursh and *Gaultheria shallon* Pursh (Ericaceae) (label data) in British Columbia and is distributed from British Columbia south. Populations in Mexico appear the same but are beyond the range of the hosts.

Plutellidae

Ellabella Busck, 1925, Proc. Entomol. Soc. Wash. 27:46.
  Type-species: *Ellabella editha* Busck, 1925, orig. desig.
  Probolacma Meyrick, 1927, Exot. Microlepid. 3:362.
    Type-species: *Probolacma melanoclista* Meyrick, 1927, by monotypy.
  Spilogenes Meyrick, 1938, Dtsch. Entomol. Zeit. Iris 52:19. **New synonymy.**
    Type-sp.: *Spilogenes chalazombra* Meyrick, 1938, by monotypy.
      chalazombra (Meyrick, 1938), Dtsch. Entomol. Zeit. Iris 52:19. *(Spilogenes).* **New combination.**
        Lectotype ♂ (BMNH). China: Likiang, [Yunnan Province].
      editha Busck, 1925, Proc. Entomol. Soc. Wash. 27:48.
        Holotype ♀ (USNM). British Columbia: Saanichton.
      melanoclista (Meyrick, 1927), Exot. Microlepid. 3:362. *(Probolacma).*
        Holotype ♀ (BMNH). Texas: Alpine, [Brewster County].

Ellabella was described in Glyphipterigidae *(auctorum)* and more recently was considered in Ethmiidae (Clarke, 1955). Meyrick (1927) considered the genus (as *Probolacma*), together with *Lotisma,* to be near the ethmiids. As noted above, Powell (1973) indicated that neither genus is gelechioid. The naked haustellum and the large 4-segmented maxillary palpi, among other characters, warrant the transfer of the genus to Plutellidae. Based mainly on larval characters, I consider Plutellidae distinct from Yponomeutidae rather than a subfamily of the latter.

Spilogenes is a synonym of *Ellabella:* the statement by Meyrick (1938) that *Spilogenes* lacks maxillary palpi is erroneous. *Ellabella* appears to be an archaic genus with one species in China and two in North America. This odd distribution is not uncommon in western North America where a number of archaic animal and plant groups have nearest relatives in the Far East. The biology of *Ellabella* remains unknown.

Homadaula Lower, 1899, Proc. Linn. Soc. N. S. W. 24:115.
  Type-species: *Homadaula lasiochroa* Lower, 1899, by monotypy.
  Paraprays Rebel, 1910, Dtsch. Entomol. Zeit. Iris 24:13.
    Type-species: *Paraprays punctigera* Rebel, 1910, by monotypy.
  Stichotactis Meyrick, 1930, Exot. Microlepid. 3:562.
    Type-species: *Stichotactis calamitosa* Meyrick, 1930, by monotypy.
      anisocentra Meyrick, 1922, Entomol. Mitt. 11:47.
        Holotype ♀ (HZMB). China: Tsingtau [= Ch'ingtao], [Shantung Prov.].
        usuguronis Matsumura, 1931, 6000 Illus. Ins. Japan-Empire, 1098. *(Hyponomeuta).*
          Holotype (?) (Hokkaido Univ.?). Japan.
        albizziae Clarke, 1943, Proc. U. S. Nat. Mus. 93:206.
          Holotype ♂ (USNM). D. C.: Washington.

Homadaula was included in the Glyphipterigidae when Clarke (1943) redescribed *H. anisocentra* as a new species introduced into North America, although Meyrick and Lower described the taxa in Plutellidae. The placement of the genus in Plutellidae was substantiated by Friese (1962), although not accepted by Clarke (1968), and again noted by Heppner and Dekle (1975). Pupal behavior and larval characters exclude the genus from Glyphipterigidae and demonstrate affinites to other Plutellidae, whereas the tineoid abdominal articulation (Heppner, 1977) excludes the genus from the Sesioidea.

There are several species of *Homadaula* in the Far East and Old World tropics, but only *H. anisocentra* has been found in eastern North America and in California. The larvae of this species feed on leaves of *Albizzia* and *Gleditsia* trees (Leguminoseae) in North America.

Araeolepia Walsingham, 1881, Proc. Zool. Soc. Lond. 1881:303.
  Type-species: *Araeolepia subfasciella* Walsingham, 1881, by monotypy.
    subfasciella Walsingham, 1881, Proc. Zool. Soc. Lond. 1881:303.
      Lectotype ♂ (BMNH). Oregon: Currant Creek, [Grant County].

Araeolepia was described as a tineid *(sensu lato)* but considered in Glyphipterigidae *(auctorum)* by Busck (1922). Superficially similar to certain western plutellids, it is actually closely related to *Ellabella*. *Araeolepia* has been difficult to place due to what appears to be a tortricoid abdominal articulation. Following comparisons with *Ellabella*, it is evident that the apodemes are broadened but otherwise tineoid. The 4-segmented maxillary palpi and wing venation characters are typical of plutellids. The male genitalia are unusual but similar to *Ellabella*.

Araeolepia is monobasic and the single known species has been collected in mostly arid regions of Oregon, Nevada, and Utah, south to Southern California.

Tortricidae

Hilarographa Zeller, 1877, Hor. Soc. Entomol. Ross. 13:187.
  Type-species: *Phalaena Tortrix swederiana* Stoll, [1790], subseq. desig. by Walsingham, 1897, Trans. Entomol. Soc. Lond. 1897:51.
    swederiana (Stoll, [1790]), Uitland. Kapell. Suppl., 75; pl. 16, fig. 5 [Cramer, v. 5]. *(Phalaena Tortrix).*
      [Type lost?]. [Surinam].
Hilarographa (auctorum)
    jonesi Brower, 1953, Ann. Entomol. Soc. Amer. 46:196.
      Holotype ♂ (Brower Coll.). Massachusetts: Martha's Vineyard, [Dukes County].
    youngiella Busck, 1922, Can. Entomol. 53:278.
      Lectotype ♀ (CNC). British Columbia: Departure Bay.
        olympica Braun, 1923, Trans. Amer. Entomol. Soc. 49:118.
          Holotype ♀ (ANSP). Washington: Olympic Hot Springs, Clallam County.
        youngella Brower, 1953, Ann. Entomol. Soc. Amer. 46:197, misspelling.
    regalis (Walsingham, 1881), Proc. Zool. Soc. Lond. 1881:319. (*Glyphipteryx* [sic]).
        Holotype ♀ (BMNH). California: Mt. Shasta, [Siskiyou Co.].

Hilarographa was included by Meyrick (1913) in his conglomerate Glyphipterigidae. The genus resembles genera now in Choreutidae, but unlike choreutids, has a naked haustellum. The forewing venation has CuA2 distant from the end of the cell as in tortricids and, together with genitalic characters and the tortricoid abdominal articulation, is placed in the Tortricidae. Diakonoff (1977) has recently transferred the genus, together with *Mictopsichia*, to a new tribe of Tortricidae, the Hilarographini, of the subfamily Chlidanotinae. The note in the description of the tribe (Diakonoff, 1977) that some species of *Hilarographa* have a scaled haustellum is erroneous.

The presence of hami and slit valvae (with coremata therein) in the male genitalia, and the typical tortricid ovipositor, together with an asteriod signum and complex accessory bursa-ductus bursae arrangement, in the female genitalia in *H. swederiana* and relatives, indicates that the Hilarographini are closely related to Southeast Asian chlidanotines and, yet, also show some similarity to Neotropical Polyorthini. Consequently, the Hilarographini may represent a transitional group between the South American Polyorthini and the Southeast Asian Chlidanotinae.

The North American fauna will be treated in a revision currently in preparation and will include a new species from Cuba similar to *H. regalis.* These species will require a new genus since adult morphological characters indicate that they are not congeneric with *H. swederiana,* the type-species of *Hilarographa.* The species remaining in *Hilarographa* appear to be restricted to the Neotropics, with most Old World species belonging in *Thaumatographa. Hilarographa regalis* larvae have been recorded as feeding on the roots of *Pinus sabiniana* Douglas (Pinaceae) (label data).

Idiothauma and *Thaumatographa,* listed as synonyms of *Hilarographa* by Meyrick (1913), are distinct genera of the Old World tropics; also members of Hilarographini.

Mictropsichia Hübner, [1825], Verz. bek. Schmett., 374.
  Type-species: *Phalaena Tortrix hubneriana* Stoll, [1787], subseq.
    desig. by Walsingham, 1914, *in* Godman & Salvin, Biol.
      Cent.-Amer., Lepid. Heterocera 4:303.
  Mictopsychia Riley, 1889, Proc. Entomol. Soc. Wash. 1:58,
    misspelling.

fuesliniana (Cramer, [1781]), Uitland. Kapell. 4:163; pl. 372, fig. E.
  ([no original combination]).
  [Type lost?] [Surinam].
    fueslynialis Cramer, 1782, *ibid.* 4:249 [index], emendation.
      (Phalaena Pyralis).
    fueslyniana Verloren, 1837, Cat. Syst. Cramer, 138,
      misspelling. *(Pyralis).*
    fuesslyana Walsingham, 1914, *in* Godman & Salvin, Biol.
      Cent.-Amer., Lepid. Heterocera 4:304, emendation.
hubneriana (Stoll, [1787]), Uitland. Kapell. Suppl., 41; pl. 8, fig. 5
  [Cramer, v. 5]. *(Phalaena Tortrix).*
  [Type lost] [Surinam].
    hubnerana Hübner, [1825], Verz. bek. Schmett., 374,
      misspelling.

Mictopsichia is similar to *Hilarographa* in a number of characters and has been included in the Tribe Hilarographini by Diakonoff (1977). The naked haustellum, tortricoid abdominal articulation, and wing venation, indicate a placement in this tribe of Tortricidae.

The genus is included here because of a male (USNM) collected in Florida nearly 100 years ago. The specimen appears to be near *M. fuesliniana.* The origin of the Florida specimen has not yet been determined, but it is a doubtful resident as no further specimens have been captured and the genus is not known from the West Indies.

Both Cramer and Stoll have been cited as author of *Mictopsichia fuesliniana.* Opinion 516 (1958) was instituted in part to settle the authorship question of the Cramer and Stoll works, but it contains several errors in reference to Cramer ([1780]-1782) and the supplement by Stoll ([1787]-1791) (W. D. Field, pers. comm.). A major discrepancy of Opinion 516 involves its acceptance of the two works as binomial, whereas the text is not always binomial. However, since Clerck's *Icones Insectorum Rariorum* is accepted, which also is not consistantly binomial, Opinion 516 can be followed in this regard. Roepke (1956) noted that Cramer's complete 4 volume work was published in 33 parts, with the index to volume 4 as the last issue of 1782. Stoll's volume is often cited as a fifth volume of the Cramer series. Using Opinion 516, it is customary now to use the generic combination of the index, but use the date and spelling of the species name from the text: thus, *M. fuesliniana* (Cramer, [1781]) instead of *M. Fueslynialis* (Cramer, 1782). In addition, Opinion 516 is incorrect in giving Stoll authorship of most of volume 4 of Cramer ([1780]-1782). Notwithstanding the fact that Stoll may have edited this volume, neither posthumous publication — Cramer died in 1776 — nor footnotes by Stoll changes the authorship from Cramer to Stoll. In lieu of a revised Opinion 516, I use the corrections thereof as noted above, with Cramer being cited as author of *M. fuesliniana* instead of Stoll.

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